REMARKS

Claims 10-21 are pending in this application. In the Office Action dated March 6, 2003, the Examiner rejected claims 13, 18, 19, and 21 under Section 112, first and second paragraphs. Claims 13, 18, 19, and 21 have been amended to obviate the rejection. The Examiner also rejected claims 10-21 under 35 U.S.C. § 103(a) as being unpatentable over Tiedemann (USPN '730) in view of Tiedemnann (USPN '922). Applicants have amended claims 10, 13, and 17-21, and have added new claims 22-28. No new matter has been added. Only allowable claims are present after entry of this Amendment. Reconsideration and allowance of the amended application are respectfully requested.

Rejection under 35 U.S.C. § 112

The Section 112 rejection has been obviated by the amendment of claims 13, 18, 19, and 21. In particular, claim 13 has been amended to replace "10" in line 1 with "11". In claim 18, the phrase "by a first device" has been added to line 2, the word "and" has been added to line 3, and the phrase "by a second device" has been added to line 4. In claim 19, "19" has been replaced with "18" in line 1, and the phrase "by the first device" has been added to line 2. In claim 20, ";" in the last line has been replaced with ".". In claim 21, "21" in line 1 has been replaced with "20".

Rejection under 35 U.S.C. § 103(a)

Claims 10-21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Tiedemann '730 patent in view of the Tiedemnann '922 patent. The Examiner asserted that the Tiedemann '730 patent shows a multi-carrier forward link with frequency bins, each of which are associated with a reverse link frequency bin. The Examiner attempted to combine the '730 patent with the Tiedemann '922 patent, which was cited for describing a system with multiple traffic channels spread over multiple 1.2288 MHz frequency bands. The Examiner asserted that those skilled in the art would know to vary the frequency bands and would thereby render the claimed invention obvious.

To establish a prima facie case of obviousness under 35 U.S.C. § 103(a), a cited combination of references must teach or suggest all of the claim limitations of a rejected claim (M.P.E.P. § 2142). The proposed combination of Tiedemann '730 and Tiedemann '922 does not provide the claim limitations, as amended.

Independent claims 10 and 17 relate to a method of spectrum management in a wireless communication system, and amended independent claim 20 is an apparatus claim corresponding to method claims 10 and 17. As exemplified by claim 10, the claimed method and apparatus teaches bandwidth allocation of the forward and reverse link transmissions by "designating a multi-carrier forward link having a plurality of forward link frequency bins" and "designating a reverse link having at least one reverse link frequency bin", wherein "the forward link frequency bins and the reverse link

frequency bin are designated such that bandwidth of the forward link can be allocated differently from bandwidth of the reverse link."

As noted in the claim language, the configuration of the forward link into a plurality of forward link frequency bins involves a multi-carrier forward link. In this way, the aforementioned designations of the forward link and the reverse link bins enable the bandwidth of the forward link to be allocated differently from the bandwidth of the reverse link.

For example, in the case of Third Generation Mobile Systems designed for transmitting information that may have very high data rate transfer requirements, such as email downloading and web browsing,

> a mobile station user may send a simple message requesting that a page from web site be downloaded to his mobile phone. This simple request requires very little bandwidth when transmitted on the reverse link to the base station, but timely downloading of the web site on the forward link from the base station to the mobile station will require substantial bandwidth. A request for a page may be in the order of a few hundred bytes, but the response from the web server can be several tens of thousands of bytes, particularly if it includes graphics or pictures.

(see the Specification at page 5, line 22, to page 6, line 6). Therefore, in this example, the method recited in the present claims enables efficient management of the bandwidth for the forward link and the reverse link through designation of the frequency bins, such that more bandwidth can be allocated to the forward link transmission than the reverse link transmission.

For another example, see the Specification at page 13, lines 3 through 5. "... a power control signal for RL power control can be sent on the three FL multi-carriers and the power control stream for FL power control can be sent on a single RL carrier."

The aforementioned designations/configurations of the forward link and the reverse link also allow the user of an existing technology, such as cdma2000 1X, to easily transition to a newer version of the technology, such as cdma2000 3X. Further, the new configurations enable preservation of the ability to offer the cdma2000 services with the backward compatibility to older services based on IS-95 systems because bandwidth of each carrier is the same as that of IS-95 system.

The Tiedemann '730 patent, however, is directed to a power control process that "enables a base station communicating over a forward packet channel to a mobile radio to control the power of the mobile radio transmitting over a reverse packet channel to the base station." (Abstract). The forward link is based on a standard CDMA channel including "a pilot channel, a synchronization channel, one or more paging channels, one or more forward packet channels and forward traffic channels. ... forward packet channel is a spread spectrum channel similar in operation to the forward traffic channel as disclosed in IS-95." (See column 5, line 17 to line 24).

The Tiedmann '922 patent is directed to a CDMA system that "improves utilization of the forward link and decreases the transmission delay in data communication ... by providing for means of transmitting data traffic over the primary and secondary code channels." (Column 4, line 41 to line 45). Therefore, it can be seen that neither the Tiedemann '730 patent nor the Tiedemnann '922 patent discloses, teaches, or suggests using multiple carriers and frequency bins to enable bandwidth

management of the forward link and the reverse link, such that the bandwidth of the forward link can be allocated differently from the bandwidth of the reverse link. The two Tiedemann patents, alone or in combination, cannot provide the recited limitations of using multiple carriers and frequency bins such that the bandwidth of the forward link can be allocated differently from the bandwidth of the reverse link. Thus, claim 10 is patentably distinguished over the proposed combination of Tiedemann '730 and Tiedemnann '922.

Claims 11-16 depend from claim 10 and are likewise patentable. Independent claims 17 and 20 include limitations similar to the limitations described above with respect to claim 10, claims 18-19 depend from claim 17, and claim 21 depends from claim 20. Newly-presented claims 22-28 depend from claim 10. Accordingly, Applicants respectfully submit that all pending claims 10-21, as well as newly-presented claims 22-28, are patentable over the cited references, and meet the requirements of 35 U.S.C. § 112 and 35 U.S.C. § 103(a).

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicants submit that all of the pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application is earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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PATENT

ATTACHMENT TO AMENDMENT:
MARKED-UP CLAIMS PER 37 C.F.R. § 1.121

Please amend the claims as follows, with changes indicated by strikeouts (deletions) and underlining (insertions) in accordance with 37 C.F.R. § 1.121:

IN THE CLAIMS

Please amend the claims as follows:

10. (Amended) A method in a wireless communication system, comprising:

designating a multi-carrier forward link having a plurality of forward link frequency bins; and

designating a reverse link having ~~a plurality of~~ at least one reverse link frequency ~~bins~~ bin,

wherein ~~each of the plurality of~~ the forward link frequency bins ~~has an associated~~ and the reverse link frequency bin are designated such that bandwidth of the forward link is allocated differently from bandwidth of the reverse link.

13. (Amended) The method of claim 11~~10~~, further comprising:

selecting a third reverse link frequency bin for reverse link transmission corresponding to the forward link transmission, wherein the third reverse link frequency bin is different from the first and second reverse link frequency bins.

17. (Amended) A method of allocating bandwidth for forward and reverse

link transmissions in a wireless communication system, comprising:

receiving communications on a multi-carrier forward link, the multi-carrier forward link having a plurality of forward link frequency bins, ~~wherein each of the plurality of forward link frequency bins has an associated~~ the reverse link having at least one frequency bin, wherein the forward link and reverse link frequency bins are configured such that the allocation of bandwidth for the forward and reverse link transmissions are variable.

18. (Amended) The method of claim 17, further comprising:

receiving by a first device a communication on a forward link frequency bin, the forward link frequency bin having an associated first reverse link frequency bin; and

transmitting by a second device via a second reverse link frequency bin, wherein said second reverse link frequency bin is different from the first reverse link frequency bin.

19. (Amended) The method as in claim 18~~19~~, further comprising:

receiving by the first device an indication of a reverse link frequency bin.

20. (Amended) An apparatus in a wireless communication system, comprising:

a first means for transmitting information on a multi-carrier forward link, wherein said multi-carrier forward link comprises a plurality of forward link frequency bins; and

a second means for designating a reverse link frequency bin ~~associated with~~

~~each of said plurality of said forward link frequency bins~~, wherein said first and second means configure the frequency bins so as to enable differential allocation of bandwidth for forward link and reverse link transmissions~~;~~.

21. (Amended) The apparatus of claim 20~~21~~, further comprising:

means for selecting a first forward link frequency bin from the plurality of forward link frequency bins for the forward link transmission, the first forward link frequency bin having an associated first reverse link frequency bins; and

means for selecting a second reverse link frequency bin for the reverse link transmission corresponding to the forward link transmission, wherein the second reverse link frequency bin is different from the first reverse link frequency bin.